

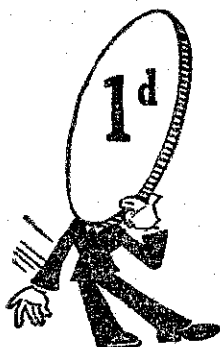
## For Home-set Builders

Above is shown a 500-volt Standard Condenser, which is so popular with Home-set Builders. It has all the soundness of construction and reliability common to the whole range of Standard Condensers (500 to 2500 volts) and possesses the maximum insulation qualities. Another practical feature is lugs at each side, which enable the Condenser to be easily screwed firmly into position, while leads to terminals on top are quickly adjusted by means of closely-fitting screws. Obtainable from all Radio Dealers.

# Standard

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# Questions and Answers

**M.E.D. (Mangatainoka):** Would a short-wave adaptor, as sketched, be practicable to plug into a four-valve H.R. battery set?

**A.:** Yes; you can use the a.c. adaptor quite satisfactorily. But why use an a.c. adaptor with a battery set? You would get much better results with a battery adaptor. You understand that the filament must go to the appropriate terminals on the step-down transformer and the cathode to earth or "A—."

**2.** What are the most suitable valves for my set?

**A.:** Use the 221 type in all stages except the last, where you could use one of the 605 high gain power valves.

**3.** What is the number of ampere hours in a 6 v. Exide battery?

**A.:** It depends upon the capacity, as there are several different sizes.

**"STATIC" (Christchurch):** When static is prevalent, more especially when tuned in to a distant station, a sound is heard just like glass splintering. Reception apart from this sound is quite good. This noise appears to be brought on by a heavy burst of static.

**A.:** We cannot help you much, as it would be necessary to put a diaphragm on your set and observe what is happening during static. It may be due to some electrical interference or else something else quite beyond your control. At the same time, it may be something wrong with the set itself, causing to make this noise when a heavy signal is being handled. Do you ever notice symptoms anything like those you speak of when the volume is turned up full, when there is little or no static about? If not, we believe that the trouble must be outside the set.

**"INTERESTED" (Petone):** The coil specifications should be: Primary 3, secondary 5, tickler 4. This would bring in the stations on the 20-40 metre, whereas your coils are now tuning in those on the 80 metre band.

**"NEVA" (Wellington):** When I go in a dark room I notice that both valves of my set turn blue. This blueness jumps about with each impulse. I am not overloading the valves, so what is the cause of this?

**A.:** In the pentode the blueness is a characteristic of good valves. It is due to ionisation of the gas within the valve, due to the bombardment of electrons from the filament to the plate.

**"TERMINAL" (Wellington):** I have not had success with the "Differential Four." Oscillation troubles me in that, unless I turn the "A" battery down at the rheostat, I can get no oscillation, but then I cannot cut the oscillation out with the reaction condenser.

**A.:** You have too many turns on the reaction coil. Take off a few and operate on the point of the rheostat, which gives maximum sensitivity. It is not necessary to have the "A" battery turned up fully to get the best results. If you cannot get the set to oscillate on short-wave, try increasing the number of turns on the coil and check your connections of the tickler coil. Make quite certain that the connections of the coil have not been reversed.

**"TIBRE" (Blenheim):** What is the impedance of the voice coil of a Magnavox D80?

**A.:** About 10 ohms.  
**2.** If I substitute a 247 for the 245, will a 60-1 ratio match the above speaker?

**A.:** No; you want a 25 or 26-1.  
**3.** The set does not carry much more volume since altering the pushpull.

**A.:** The valves in pushpull will not give any more volume—they will only

handle it better. Perhaps the overload point is in the speaker, and not in the last valve. Then again the distortion may be taking place before the last valve. Put a pair of phones across the primary of the input pushpull transformer and turn the volume up full. Note if there is any distortion there.

**J.G.R. (Takaka):**—Which set described in the "R.R." and "Guide" do you consider would give the best results?

**A.:** The "Outspan Five" is easily the most sensitive. It was described in the "Radio Record" some time ago.

**2.** How would this set compare with a modern five or six-valve electric set?

**A.:** It would compare very favourably with a set comprising 5 amplifying valves.

**3.** What type of valves are suitable?

**A.:** You could use any voltage filament valves, two, four, or six, with two screen-grid valves, a special detector, a general valve, and a high gain output valve.

**DX64A (Mokau):**—How can I convert an ordinary 5-valve set into a short-wave set?

**A.:** You cannot, particularly as in this case it is a commercial set; would it be impractical to attempt to do so. Your best plan would be to make a shortwave adaptor.

**"GOOKER" (Petone):**—Why do I have to turn the volume on more than half before I get anything?

**A.:** There is probably a defect in your control—that is, if it comes on suddenly after the half-way mark has been passed. If it is quite faint after this point, then probably either your valves are old, or there is some unnecessary resistance in the circuit.

**"NEMO" (Auckland):**—Where could I obtain particulars for making a chemical rectifier for use in conjunction with the step-down transformer?

**A.:** A chemical rectifier would not be satisfactory. It is better to spend a little extra and get a valve. Valve chargers of this nature have been described in the "Radio Guides" of previous years.

**W.H.B. (Wellington):**—I have a battery all-wave set in a back room of the house, and downstairs an electric set is being operated without an aerial. When I turn on my set it makes the big one fade. I also tried mine without an aerial, but the same thing happened. The electric set worked quite satisfactorily until the aerial was taken down, and since then mine has affected it.

**A.:** What do you mean by fading? Is it periodic swinging or are the signals not so loud when you turn your set on? Do you have a common earth? Perhaps both sets are connected with the water supply. If that is the case, then separate them. Cannot you work the big set from an outside aerial, and if so is it affected in the same way? With the data you have given it is quite impossible to say definitely what the cause is, or what the remedy.

**H.S. (Wellington):** I am making the "Night Owl Three" into portable form with frame antenna. Would this be satisfactory?

**A.:** Yes, but it will not be satisfactory on shortwave. It is far better to make up the "Picnic" portable circuit, which you are attempting to adapt. You could use a frame antenna with the "Night Owl" for longwave reception.

**2.** Would the panel have to be lowered an inch to clear the baffle board?

**A.:** In all probability, yes.

**3.** What is Litz wire?

**A.:** It is a stranded wire, composed of a number of very fine strands, each one being covered with silk.

**"NEVA" (Wellington):** Two separate sets of queries sent in in separate letters does not exempt you from the "three" limit. Fair is fair, old man.

**"DINK" (Christchurch):** When I turn the volume control up on my set a terrific scraping sound is heard.

**A.:** Probably the volume control is worn. Try replacing it. Another method would be to shunt it with a large by-pass condenser.

**2.** How could I sharpen the tuning of my set, which is very broad?

**A.:** By employing a band-pass filter unit. This should be placed ahead of your set and tuned together with the main tuning dial.

**3.** What is a microstat, and what is it used for?

**A.:** It is a particular type of high value variable resistance.

**"DYNAMO" (Waitomo Caves):** I burned out the screen-grid valve of my "Outspan Five" and am using ordinary valves. Is this harmful to the set?

**A.:** No, providing you have adjusted the voltage on the plates of the valves.

**2.** Would the "Outspan Five" work with 2-volt valves instead of 6?

**A.:** Yes, just as well.

**3.** How would I connect the pickup in the "Super Six"?

**A.:** In the grid circuit of the second detector. Connect one end of the pickup to earth and arrange a two-way switch, the moving contact being the grid of the valve, one contact being the other side of the pickup and the other the top of the grid coil.

**"WIRED" (Wellington):** What would be the specifications for the broadcast coils of the "Differential Four," using 30 gauge wire wound on 1 1/2 in. former, and using .00035 condensers?

**A.:** 100 turns d.s.c. wire for the secondaries, the primary about 35 turns, the reaction 40-50 turns. The primary and reaction could be wound with 36 gauge wire. We are pleased you have had success with the "Differential Four."

**S.R.T. (Auckland):** I cannot turn the volume control to maximum when tuning in a low-powered station owing to static. Is there any way of overcoming this?

**A.:** No, it is one of the fundamental problems of radio.

**2.** If it is a power noise, what improvement can be effected?

**A.:** The fitting of an interference filter would stop some from getting through into the mains, but very little can be done on the question of interference.

**"JACKO" (Otahuhu):**—I am using B406 in the last stage of my five-valve set. I have tried B405 in the first audio, and find that I get better results than by using a A409. Would I in any way injure the components if I used this valve permanently in that position?

**A.:** It is possible that you would burn out the primary of your inter-valve transformer. However, put as much bias on this valve as is possible, thus cutting down

## Information Coupon

(To be used with all requests for information.)

Name of set .....

Model .....

Name .....

Address .....

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